

NOTES ON MIKANIA (COMPOSITAE) - V

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MIKANIA ANGULARIS H. & B., Pl. Aeq. 2: 87. 1809.

Type: Ecuador, Gonanama, Humboldt & Bonpland 3434 (P)

M. armigera Poepp., Poepp. & Endl. Nov. Gen. ac Spec.
3: 52. 1845.

Type: Perú, Cuchero, Poeppig D (F!, isotype)

M. laxa DC., Prodr. 5: 200. 1836.

Type: Perú, Poeppig 1218 (W, F-photo!)

Mikania angularis is a rarely collected plant of Perú, Ecuador and Colombia. It is very similar in many respects to M. vitifolia DC., but easily distinguished by its corolla teeth being distinctly greater in length than the true throat. Mikania vitifolia has corolla teeth and throat about the same length. Robinson (1922), in his key to Mikania of Perú, separated M. angularis from M. laxa on the direction of divergence of the basal lobes of the leaves and pappus color. Comparison of these two plants showed that the direction of basal lobe divergence varied on the same plant and cannot be considered as an accurate distinguishing character. Separating M. laxa from M. angularis on the basis of a rufescent pappus is arbitrary at best, since, according to Steyermark (1953), the reddish color of the pappus may be due to aging or drying in some particular manner, and the character cannot be accepted as trustworthy. Apparently there is no character that consistently separates M. laxa from M. angularis, the two are therefore considered conspecific.

Specimens examined: PERU: Cuzco: Piuipiui, 720 m, September 28, 1966, C. Vargas C. 17793 (US). Huanuco: Huanuco, near Monzon River, Weberbauer 3640 (F). Junin: La Merced, Hacienda Schunke, 4000 ft., August 27-Sept. 1, 1923, J. F. Macbride 5290 (F, GH, US).

MIKANIA BANISTERIAE DC., Prodr. 5: 193. 1836.

In connection with monographic work in Mikania it was necessary to determine the correct status of a number of Peruvian species with close affinities with M. banisteriae. Steyermark (1953) was the first to recognize the extreme polymorphism in this complex which is characterized by considerable variability in tomentum on stems, petioles, leaves, rachis and in leaf-shape. Among the more constant characters useful in keying and delimitation are the nearly glabrate ovate-oblong involucre scales with rounded apices, ovate exterior bract usually borne slightly beneath and about one-half the length of the involucre, corolla tube and throat about the same length, the throat being abruptly and broadly campanulate (about as wide as high), and corolla teeth about the same length as the throat. Peruvian plants, other than those previously treated by Steyermark (1953) and all proposed by Robinson, included here are M. macbridei, M. rugosa, M. bullata and M. trichodes. The latter three species had types housed at B which are presumed to be destroyed, making direct comparison difficult. In Robinson's key (1922) to Mikania of Perú, these three species are closely allied to M. lanuginosa and M. ruiziana (both = M. banisteriae) and inseparable, with material available for study, by the characters used in the key, making correct disposition somewhat provisional. However, an examination of type fragments of these three species at GH reveals constant and adequate differences from M. banisteriae and they should be maintained as distinct. Mikania macbridei, with ample material for study including the type, does not appear to be distinct from M. banisteriae. Each name will be discussed in turn below.

MIKANIA MACBRIDEI Robinson, Contrib. Gray Herb. 73: 27. 1924.

Type: PERU: Junin: La Merced, Hacienda Schunke, ca 4000 ft. August 27-September 1, 1923, J. F. Macbride 5728 (F!)

According to Robinson (1924), this is a well-marked species with all but the youngest leaves covered with a very curious white veil-like covering which upon closer examination proves to be a fungal mycelium. Examination of the holotype showed that it exhibited all of the reliable diagnostic characteristics of M. banisteriae mentioned above. The only distinguishable character is the presence of the fungus which naturally does not justify retention of specific status. It is unfortunate that this Mikania named in honor of J. Francis Macbride, who greatly furthered the botanical knowledge of Perú, be no more than a specimen of M. banisteriae infected with a fungus. The plants cited below, all determined and annotated in the hand of B. L. Robinson, have on the basis of the presence of a whitish fungal mycelium been referred

to M. macbridei and are otherwise indistinguishable from M. banisteriae and should therefore be considered that species.

Specimens examined: PERU: Junin: Chanchamayo Valley, 1500 m, July 1929, Carlos Schunke 475, 476 (both F); Chanchamayo Valley, Quimiri, 1500 m, June 1929, Carlos Schunke 26 (F,GH) (The heads of this collection are extremely immature and/or severely infected by a fungus.)

To further compound the above problem, additional specimens from Junin, Perú, also have been identified as M. macbridei (= M. banisteriae). These have what appears to be a fungal mycelium, though not to the extent of the above specimens, or possibly they have a fine velvety pubescence. The material is certainly different from what was known as M. macbridei (= M. banisteriae), possessing a more open inflorescence with the heads somewhat clustered toward the tips of the branches. Heads are at most 5 mm in length and appear normal in all respects. Mikania banisteriae has heads 8 mm or more in length. The exterior bract in these specimens is much shorter, ca 1 mm long. The corolla is also smaller, ca 3 mm long, with the tube gradually expanding into a funnellform throat. (See above for further characters of M. banisteriae.) As the material is not referable to any known species, it is described below as new.

MIKANIA JUNINENSIS Holmes & McDaniel, sp. nov.

Suffrutex volubilis; foliis ovatis, ad 8.5 cm longis et 4.5 cm latis, apice acutis vel rotundatis, basi rotundatis vel obtusis, marginibus integris; inflorescentiis paniculatis, capitulis ca 5 mm longis, corollis ca 3-3.3 mm longis, dentibus limbi anguste triangularis, ca 1 mm longis; achaeniis ca 2 mm longis; pappi setis ca 30, ca 3 mm longis, barbellatis.

Subligneous vine; stems terete, velvety-tomentulose, internodes ca 7 mm long; leaves ovate, ca 8.5 cm long and 4.5 cm wide, margins entire, apices acute to rounded, bases rounded to obtuse, upper surfaces glabrate, pinnately nerved, the major nerves with dense white appressed pubescence, lower surfaces crisped-hairy mainly on the nerves, the veins exerted, lighter than above, petiole ca 1-2 cm long, velvety-tomentulose. Inflorescence a rather open panicle with the heads clustered near the tips of the oppositely borne branches, ca 30 cm long and 15 cm in diameter, branchlets terete, velvety-tomentulose. Heads 3-4 mm long, exterior bract ovate-oblong, ca 1-1.2 mm long, glabrate, apices rounded, irregularly ciliate, borne well beneath the involucre. Involucral scales oblong, ca 3 mm long, glabrate, apices rounded. Corolla ca

3-3.3 mm long, greenish-white, tube ca 1-1.2 mm long, gradually expanded into the turbinate throat, throat ca 2.3-2.5 mm long, teeth lanceolate to narrowly triangular, ca 1.3 mm long. Achene ca 2 mm long, olivaceous, pappus bristles ca 30, ca 3 mm long, barbellate.

Type: PERU: Junin: Pichis Trail, Porvenir, 1500-1900 m, July 3-4, 1929, Killip & Smith 25912 (GH-holotype, F-isotype).

Paratype: PERU: Junin: Pichis Trail, Dos de Mayo, 1700-1900 m, July 2-3, 1929, Killip & Smith 25797 (GH).

As previously stated, the pubescence of this species is difficult to distinguish from a fungal mycelium. In color it is white and easily rubbed off. However, this condition appears to have in no way affected the plant and is not used in separating this plant from all other Peruvian species of Mikania.

MIKANIA RUGOSA Robinson, Contrib. Gray Herb. 61: 20. 1920.

Type: PERU: Puno: Ramospata, between Sandía and Chunchusmayo, 2400-2500 m, July 27, 1902, Weberbauer 1323 (B-destroyed?, GH-photo & fragm.!).

Mikania rugosa may be distinguished from M. banisteriae by its somewhat hexagonal stem and densely tawny-tomentulose involucre. Mikania banisteriae has terete stems and glabrate involucral scales. In all other characters the two plants are suspiciously alike.

MIKANIA BULLATA Robinson, Contrib. Gray Herb. 61: 13. 1920.

Type: PERU: Puno: between Tambo Ichubamba and Tambo Yuncacoyo, on the way from Sandía to Chunchusmayo, 1800-2000 m, Weberbauer 1085 (B-destroyed?, GH-photo & fragm.!).

Robinson (1922) separates Mikania bullata from M. ruiziana and M. lanuginosa (both = M. banisteriae) by color and texture of pubescence, leaf shape and character of the leaf surfaces. As previously noted, these characters cannot be used with any degree of certainty in this complex. However, this species differs from M. banisteriae in the scabrid nature of its upper leaf surface and the linear to oblanceolate exterior that is one-half or more the length of the involucre. These two traits appear to be consistent on the small fragments of the type seen and justify retention of the name.

MIKANIA TRICHODES Robinson, Contrib. Gray Herb. 61: 22. 1920

Type: PERU: Huanuco: Huamalies, mountains to the SW of Monzon, 2500-2900 m, Weberbauer 3395 (B-destroyed?, GH-photo & fragment!)

Separated from Mikania banisteriae by its scabrous stem and very prominent interpetiolar ring or fold connecting opposite petioles. Other than these characteristics, exceeding near M. banisteriae and doubtfully distinct, but under the above stated conditions, better treated at present as distinct.

MIKANIA CRISTATA Robinson, Proc. Am. Acad. 47: 6. 1911.
(Contrib. Gray Herb. 39: 195. 1911.)

Type: Costa Rica: La Palma, 1459 m, A. Tonduz 12583 (US!)

Formerly unknown outside of Costa Rica, this species has recently been collected in Chiriqui, Panamá. The ovate leaves with cordate bases, twining habit, corymbose inflorescence and heads about 10 mm long resemble the more prevalent Mikania cordifolia (L. f.) Willd., a species with which M. cristata is often confused. The latter species is characterized by its large, stipular-like nodal appendages, terete glabrous stems, and linear corolla teeth that are about three times the length of the throat. Mikania cordifolia has exceedingly small nodal appendages which are not at all prominent, tomentulose to tomentose hexagonal stem and corolla teeth slightly longer than the throat. This species makes an interesting addition to the known species of Mikania from Panamá.

Specimens examined: COSTA RICA: Alajuela: La Palma de San Ramon, Sept. 21, 1928, A. M. Brenes 6323 (NY); Cartago: Cerro de la Muerte, 3000 ft, Aug. 24, 1962, R. M. King 5394 (MICH, TEX, US); roadside 8 km se of Tapanti, 1500 m, June 18, 1967, R. W. Lent 1057 (MO); San José: La Palma, 1459 ft, Sept. 1898, A. Tonduz 7421 (US); near Finca La Cima, above Los Lotes, n of El Copey, Dec. 21-22, 1925, P. C. Standley 42612 (US); La Palma, 5600 ft. Jan. 28, 1972, R. M. King 6426 (US); Prov. unknown: Very Blanca de Sarapiquí, n slope of Central Cordillera, A. F. Skutch 3176 (MO, US) & 3655 (MO, TEX). PANAMA: Chiriqui: Cerro Respínga, above town of Cerro Punta, 8400 ft, Aug. 8, 1972, W. G. & J. D. D'Arcy 6564 (MO); Boquete, Cerro Horqueta, 5000-6000 ft, Aug. 8, 1967, J. D. Dwyer 7689 (MO).

Another species possessing large foliaceous stipular-like enations is reported from Guatemala by Williams (1975).

He incorrectly states that this species, Mikania stipulifera, is the only one in Central America possessing large foliaceous enation, apparently being unaware of M. cristata. King and Robinson (1977) state that M. stipulifera has no described differences, implying that the two are synonymous. The two are quite similar vegetatively and in form of the inflorescence, but examination of an isotype (Glassman 1648, WIS) showed the two species to be amply distinct. They may be distinguished as follows:

Corolla teeth ovate-lanceolate, as long as or slightly longer than the throat, the teeth with two pairs of veins, one near the margins, the other inward and parallel to the first.....M. stipulifera.

Corolla teeth linear, the throat extremely short, almost appearing non-existent, corolla teeth with one pair of veins.....M. cristata.

To be included as a synonym of Mikania stipulifera is M. stipulata Standl. & Wms. of Clewell, Ceiba 19: 206. 1975.

MIKANIA GUACO H. & B., Pl. Aeq. 2: 84. 1809.

Type: Colombia: Magdalena River between Mahates & Angostura, Humboldt & Bonpland 1447 (P).

M. amara var. guaco (H. & B.) Baker in Mart. Fl. Bras. 6: 237. 1876.

Willoughbya guaco (H. & B.) Kuntze, Rev. Gen. 1: 372. 1891.

M. attenuata DC., Prodr. 5: 195. 1836.

Type: Peru: "in montibus Huanacocensis", Haenke s. n. (G-DC-microfiche!, GH-photo!)

M. cuneata Sch.-Bip., Bonplandia 4: 54. 1856 (nomen nudum).

Type: Peru: San Govan, Lechler 2477 (F-isotype!)

M. brachiata Poepp. in Poepp. & Endl., Nov. Gen. & Sp. 3: 53. 1854.

Type: PERU: San Martín: in forests at Tocache, Poeppig 2041 (W, F-photo & frag.!)

M. olivacea Klatt, Bull. Soc. Roy. Bot. Belgique 31:
195. 1892 (1893).

Type: Costa Rica: forests de Buenos-Aires, 2300 m, Pittier 4433
(BR, GH).

Mikania guaco is a widespread species well marked by its leaf bases prominently cuneately decurrent upon the petioles. It has affinities with a difficult group of plants with corymbose inflorescences and sessile ternately disposed heads. Robinson (1922) in his key to the species of Mikania in Perú separated this species from M. brachiata on head size, the former with heads ca 10 mm long, the latter with heads 8 mm or less in length. Our repeated attempts to distinguish these two plants on that basis have failed. Examination of Peruvian material of this group showed that head size varied from 7-10 mm, with no definite discontinuity between the two extremes. A portion of the type material of M. brachiata has heads 9-10 mm long and by Robinson's (1922) key would be referred to M. guaco. No character or group of characters could be found which would consistently separate the two plants. In all other aspects such as the cuneate leaf bases, disposition of heads and presence of hirsute stigmas the plants are suspiciously alike. They are therefore considered to be the same species under the older name M. guaco.

Peruvian specimens examined: Ayacucho: Aina between Huanta and Río Apurímac, 750-1000 m, May 7, 1929, Killip & Smith 22793 (GH, US). Cuzco: Quispicanchis, María Patay, Cadena, 1100 m, July 24, 1957, C. Vargas C. 11677 (US); Villcabamba, Hacienda on Río Chincayo, 6000 ft., July 17-26, J. F. Macbride 5190 (F); Huánuco: Huánuco, down river 2.5 hrs to 1 day's travel from Tingo María, 7000 ft., July 14-15, 1937, Charles M. Belshaw 3104 (F, GH, US); Fundo Honolulu, cerca a Tingo María, Carretera Huánuco-Tingo María, 600-700 m, August 8, 1947 Ramon Ferreyra 2258 (US); Tingo María, shore of Río Mozon, August 12, 1940, Erik Asplund 12974 (F); Pozuzo, 800-900 m, 1908-1914, A. Weberbauer 6774 (F, GH, US). Loreto: Boqueron Padre Abad, 470 m, Felix Woytkowski 34376 (F); Divisoria, cerca a Chinchono, entre Tingo María i Pucallpa, 1500-1600 m, July 21, 1948, Ramon Ferreyra 4314 (US) and 4292 (US); Florida, Río Putumayo, at mouth of Río Zubineta, 180 m, May-July 1931, G. Klug 2172 (F, GH); Contamana, near road to Oriente, 160-180 m, July 26, 1970, McDaniel 14057 (IBE); Maynas. Dtto. Iquitos. Quebrada Aucaya, trocha de Nuevo Union, May 21, 1973, McDaniel & Rimachi 17171 (IBE, NATC), La carretera de Momoncillo near Río Momón, March 11, 1973, McDaniel & Rimachi 17007 (IBE), along Río Amazonas s of Iquitos, August 18, 1972, Thomas B. Croat 19307 (GH, IBE), lower Río Nanay, May 29, 1929, L. Williams 542 (F, GH), Río Nanay near Iquitos, between Bellavista and Sta. Clotilde, ca 110 m, June 18, 1970,

McDaniel 13576 (IBE), 5 km sw of Iquitos, July 15, 1972, Croat 18144 (IBE), Iquitos, ca 100 m, Aug. 2-8, 1929, Killip & Smith 27386 (F, GH, US), Iquitos, San Juan, 120 m, Oct. 12, 1929, L. Williams 3721 (F, GH), Iquitos, 120 m, April 9, 1930, L. Williams 8197 (F, GH). Madre de Dios: Parque Nac. del Manu, Cocha Cashu, forest in vicinity oxbow lake of Río Manu, between Panagua & Tayakome, Aug. 17-24, 1974, Robin B. Foster 3483 (IBE). San Martín: Zepalacio, near Moyobamba, 1200-1600 m, Dec. 1933, G. Klug 3412 (US); Mariscal Cáceres. Dtto. Tocache Nuevo. Quebrada Luis Sálas, 5 km ne Puerto Pizana, Aug. 1, 1973, J. Schunke V. 6584 (IBE).

MIKANIA HUANUCOENSIS Holmes & McDaniel, sp. nov.

Suffrutex volubilis; foliis ellipticis, ad 5.5 cm longis et 2.5 cm latis, apice acutis vel attenuatis, basi cuneatis; paniculis capitulis in spicas; capitulis 10-11 mm longis; corollis ca 5 mm longis, dentibus limbi obtusis; achaeniis ca 4.5 mm longis; pappi setis ca 40-45, 5 mm longis, barbellatis.

Suffrutescent liana to 10 m tall, stems striate-sulcate, fistulose, glabrous, internodes to ca 4 cm long. Leaves elliptic, to ca 5.5 cm long and 2.5 cm wide, margins entire-revolute, apices acute to acuminate, bases cuneate, upper surfaces very lightly sericeous toward the margins, obscurely pinnately nerved, with 2 pairs of secondary nerves arising within the basal half of the leaf, these arching toward the apex, lower surfaces glabrate to lightly pilose, the major nerves exserted, petiole ca 0.5-0.7 cm long, lightly sericeous. Inflorescence paniculate, to ca 14 cm long and 8 cm wide, the ultimate branchlets spicate, borne oppositely, to ca 8 cm long, branchlets striate, lightly glandular. Heads ca 10-11 mm long, loosely disposed, exterior bract linear to narrowly elliptic, to ca 1.5 mm long, glandular. Involucral scales oblong, ca 6 mm long, glabrate, glandular, apices rounded, puberulent. Corolla ca 5 mm long, white, glandular, tube ca 3 mm long, gradually expanding into the throat, throat ca 2 mm long, teeth obtuse, ca 0.5 mm long, glandular. Achene ca 4.5 mm long, glandular toward summit, dark olivaceous, ribs white. Pappus bristles ca 40-45, white, ca 5 mm long, barbellate, somewhat thickened toward the tips.

Holotype: PERU: Huánuco: Río Negro, pampa of fern, 1000 m, flowers white, 8-10 m tall, January 14, 1961, Felix Woytkowski 6192 (MO).

Mikania huanucoensis, known only from the type, has a spicately disposed inflorescence with heads 10-11 mm long. Leaves are elliptic, pinnately nerved, at most 5.5 cm long,

cuneate at the base and acute to acuminate at the apex. Internodes are short, normally less than 4 mm long.

Among the Peruvian species of Mikania the new species approaches nearest M. szyszyłowiczii Hieron., a species with rounded leaf apices and heads 5-7 mm long. Mikania psilostachya, a very widespread species, has a similar inflorescence, including heads of about the same size (10-11 mm) as M. huanucoensis, but is very scabrous, a character not at all evident in the latter species. Mikania psilostachya also has the corolla throat about three times or more as long as the tube, while the new species has a throat slightly longer than the tube.

MIKANIA MICROPTERA DC., Prodr. 5: 196. 1836.

Type: Brazil: Bahia, Blanchet 1710 (G-DC-microfiche!, MO!)

M. scandens var. microptera (HBK.) Baker in Mart. Fl. Bras. 6: 259. 1876.

M. hexagona Robinson, Proc. Am. Acad. 47: 196. 1911.

Type: Venezuela: near Tovar, 1700 m, 1854-55, A. Fendler 626 (GH).

Mikania microptera, readily identified by its distinctly hexagonal stems with narrow sub-herbaceous wings, is a little collected plant with an interesting distribution. This species, previously known from Bahia, Brazil (type) and Amazonian Perú and nearby Bolivia, has recently been confirmed as occurring in Africa (which will be fully documented in a forthcoming treatment of the Old World species of Mikania). Additional studies have confirmed the occurrence of this species in Parana and Amapa, Brazil, the Guianas and Venezuela. Comparison of M. microptera with the Venezuelan endemic, M. hexagona, showed the two uncomfortably close, apparently inseparable except by distribution. No differences can be noted in Robinson's (1911) original description or later (1922) work concerning these two plants. The two were never noted as being similar by Robinson and appear to be separated primarily on phytogeographic grounds; the same species was thought to be unlikely to occur in two widely separated areas. Unfortunately, these areas were more often artificial than vegetational or physiographic and the discontinuities more likely due to inadequate collecting. This is clearly shown in comparable cases in Robinson's (1934) later treatment of M. hookeriana DC. and M. vitifolia DC. and in Steyermark's (1953) treatment of M. banisteriae DC. With the increased knowledge of the

distribution of M. microptera in Brazil, the Guianas, Peru, Bolivia, Venezuela, and Africa, there can be little doubt that the name M. hexagona should be considered nothing more than a synonym of M. microptera.

South American specimens examined: BOLIVIA: Santa Cruz: Prov. Florida, Bermejo, valley of Río Bermejo, 30 km e of Samaipata, 800 m, Sept. 9-11, 1947, R. F. Fosberg 28640 (US). La Paz: near Yungas, 6000 ft., 1885, H. H. Rusby 1645 (F, K, MICH, US). BRAZIL: Amapá: Río Araguari, Sept. 11, 1961, Pires, Rodrigues & Irvin 50868 (NY, US). Paraná: Campina Gde do Sul, Rod, Br-2, Ribeirao do Cedro, Sept. 17, 1961, G. Hatschbach 8295 (RB). Location unknown: Riedel 913 (GH, P). GUYANA: Mazaruni-Potaro: upper Mazaruni River, Sept. 22-Oct. 6, 1922, J. S. De La Cruz 2121 (F). North West: Amakura River, March 23-30, 1923, J. S. De La Cruz 3445 (F, US). Exact Location unknown: 1837, Schomburgk 321 (F, K). PERU: Loreto: Gamitanacocha, Río Mazan, 100-125 m, Feb. 28, 1935, J. Schunke 386 (US). Exact Location unknown, Poeppig 2335 (P). SURINAM: Saramacca: in vic. cataractarum Raleigh fluminis Sup. Coppename, Sept. 11, 1961, W. H. A. Hekking 1008 (US). VENUZEULA: Delta Amacuro: downstream from mouth of Yarakita River, Río Amacuro, Sierra Imtaca, 65-80 m, Nov. 9, 1960, Steyermark 87453 (NY, UC).

MIKANIA OCHROLEUCA Robinson, Contrib. Gray Herb. 80: 38. 1928.

Type: Brazil: Seringal S. Francisco, Rio Acre, July 1911, E. Ule 9886 (K).

The discovery of this plant in Perú is noteworthy since it was previously known only from the type collected in adjacent Brazil. The species is characterized by its spicately disposed heads and triangular leaves with hastate bases. Although the type material was not seen, the material cited below matches well the original description and the description and drawings of Barosso (1959).

Specimen examined: PERU: Cuzco: Quispicanchis, entre Inambari y 15 Mil, 500-650 m, Sept. 3, 1965, C. Vargas C. 16528 (US).

MIKANIA SIMPSONII Holmes & McDaniel, Phytologia 37: 473. 1977.

Type: PERU: Loreto: Maynas. Dtto. Alto Nanay. trail near Santa Marfa de Nanay, March 4, 1968, Donald R. Simpson 781 (US).

A well marked species with whorled leaves of ovate shape and long tapering apices. It was previously known only from the type; additional species cited below extend its

distribution into Colombia as well as the department of Amazonas, Perú.

Specimens examined: COLOMBIA: Putumayo: Río San Miguel o Sucumbios, Santa Rosa y los alrededores, 380 m, April 7-8, 1942, R. E. Schultes 3628 (GH); Umbria, 0°54' N, 76°10' W, 325 m, October-November, 1930, G. Klug 1825 (F, GH); Río San Miguel en el afluente izquierda Quebrada de la Hormiga, 290 m, December 17, 1940, J. Cuatrecasas 11145 (F). PERU: Amazonas: Quebrada Huampamí, Río Cenepa, 700-800 m, March 12, 1973, E. Ancuash 126 (IBE).

MIKANIA SZYSZYLOWICZII Hieron., Bot. Jahrb. 36: 475. 1906.

Type: PERU: Cajamarca: near Tambillo, von Jelski 681 (B-destroyed?, GH-fragment, F-photo!).

Mikania szyszyłowiczii is a relatively little known plant of the eastern slopes of the Peruvian Andes, and now adjacent Ecuador, known to occur to about 3000 m elevation. It is a somewhat woody, glabrous liana to subshrub and the only known Peruvian Mikania with spicately disposed heads possessing ovate to obovate leaves with rounded apices and cuneate bases. The Ecuadorian specimen, the first of this species from outside Perú, is annotated as this species by Julian A. Steyermark. This note is added here because no published record of its occurrence in Ecuador is available. The herbarium label, handwritten in pencil, is nearly unreadable, but interpreted as accurately as possible.

Specimens examined: ECUADOR: Zamora Ibaico (?), 2250-2300 m, July 17, 1946, R. Espinosa 663 (F). PERU: Amazonas: Bongara, Jalco zone, 3 km s of Pomacocha, June 20, 1962, Wurdack 976 (US). Huanuco: Carpish, above Acomayo, July 17, 1964, Hutchinson & Wright 5949 (F, US). Junin: La Merced, August 1947, Soukup 3370 (F). San Martín: Zepalacio, near Moyobamba, December 1933, G. Klug 3412 (F, MO).

MIKANIA BROOKSII Holmes & McDaniel, sp. nov.

Suffrutex volubilis; foliis ovatis, ad 8 cm longis et 6 cm latis, apice acutis ad acuminatis, basi obtusis ad truncatis, marginibus integris; inflorescentiis corymbosis; capitulis ca 7 mm longis; corollis ca 3.5 mm longis, dentibus limbi deltatis, ca 0.3 mm longis; achaeniis ca 3 mm longis; pappi setis ca 40-45, ca 3.5 mm longis, scaberulis.

Subligneous liana, stems terete, somewhat puberulent-scabrid, sparsely glandular, internodes to ca 10 cm long. Leaves ovate to broadly ovate, to 8 cm long and 5 cm wide,

bases obtuse to truncate, apices acute to acuminate, above somewhat scabrid, with whitish pustules, the major veins crisped-puberulent, pinnately nerved with 2 pairs of secondary nerves separating within the basal 1/3 of the leaf, the primary and secondary veins prominent, the others obscure, margins entire, below lighter, puberulent, all veins exerted, petiole ca 5-6 mm long, tomentulose-puberulent, thickish. Inflorescence a panicle of oppositely borne corymbs, ca 11 cm long and 8 cm in diameter, each corymb ca 2 cm long and 4 cm in diameter, branching dichotomously, branchlets terete, densely crisped-puberulent, glandular. Heads sessile to very shortly pedicellate, ternately disposed, ca 7 mm long, exterior bract ovate-obovate to broadly elliptic, 2.5 mm long, somewhat petiolate, apices rounded, irregularly ciliate, the midvein prominent, 1/2-1/3 the length of the involucre, sparingly glandular. Involucral scales elliptic-oblong, 4-4.5 mm long, apex rounded, somewhat pubescent toward the base and apex, 3-5 obscurely visible veins present. Corolla violet, ca 3.5 mm long, tube and throat indistinguishable, teeth deltoid, ca 0.3 mm long, glandular. Achene (slightly immature) ca 3 mm long, greenish. Pappus bristles ca 40-45, white, ca 3.5 mm long, scabrid, thinner toward the tips. Stigmatic appendages densely hirsute.

Holotype: PERU: Loreto. Prov. Maynas. Dtto. Iquitos. Río Momón (trib. Río Nanay), Santa Rosa, January 3, 1978, McDaniel, Rimachi & Brooks 21387 (IBE). (fragment and photos to be distributed).

Mikania brooksii is closely related to M. parviflora (Aubl.) Karts. as shown by the ternately disposed, mostly sessile heads and more or less ovate petiolate exterior bracts. The new species is distinguished by its much shorter petioles of about 5-6 mm long and smaller heads about 7 mm long. Mikania parviflora has heads ca 9-10 mm long and petioles greater than 10 mm long, normally to ca 5 cm long. Mikania brooksii is also closely related to M. pycnadenia Robinson, but lacks the multitude of dense orange-reddish punctate glands of that species.

MIKANIA ALATA (Mey.) DC., Prodr. 5: 197. 1836.

The discovery of a plant (McDaniel & Rimachi 18963) meeting the salient diagnostic characters of Mikania alata (Mey.) DC. (sensu Barroso, 1959) prompted investigation into the legitimacy of the epithet alata. The name M. alata is based upon Kleinia alata G. F. W. Mey., Prim. Fl. Esseng. 249. 1818. The decision of DeCandolle to merge the dubious genus Kleinia in Mikania is apparently based upon description alone, since no type or authentic material was cited or has

been located. Undoubtedly, without seeing a specimen, it was placed in the genus Mikania on the premise that it could be that genus, but the presence of 4-5 involucre scales, plus an exterior bract, left much doubt as to its true identity, hence the use of a question mark by DeCandolle. Other than the possible difference in the number of involucre scales, which if true could make the plant something other than a species of Mikania, the plant called M. ?alata has no described differences from the well-known, widespread and polymorphic M. micrantha HBK. Robinson (1934), noting the similarities of the descriptions of these two plants, refused to accept the slightly older epithet alata in place of micrantha. This was based on the lack of type or authentic material and possibly the discrepancy in number of involucre scales. Until such time as type material is discovered and available, the name M. alata is, as Robinson (1934) pointed out, best treated as a doubtful synonym of M. micrantha.

Baker (1876) treated Mikania alata as a variety of M. scandens (L.) Willd. His description of var. alata is nearly identical to that of M. alata of DeCandolle. In addition he cited as specimens, Spruce 983, 458, and 1615. Barroso (1959) citing Spruce 983, treated it as a distinct species, separating it from M. micrantha by the lack of glands on the achenes and by the winged angles of the achenes, both not characteristic of M. micrantha. Examination of Spruce 983 (F), which is essentially identical to McDaniel & Rimachi 18963, certainly showed the plant to be different from M. micrantha, mainly in having slightly larger heads and involucre scales and with the corolla teeth ca the same length as the throat proper (M. micrantha has corolla teeth much shorter than the throat proper). However, the winged condition of the achenes appears mainly on the immature ones and under careful examination the achenes are sparsely glandular, especially toward the summit.

Since the plant referred to as M. scandens var. alata by Baker and M. alata (Mey.) DC. (sensu Barosso), although distinct from any known species of Mikania is, as best be determined, not a proper use of the basionym alata, and hence must be renamed. Since we reached this decision, we have both had the opportunity to see the plant in the field further confirming its very ample distinctiveness. We therefore describe it as new below.

MIKANIA RIMACHII Holmes & McDaniel, sp. nov.

Suffrutex volubilis; foliis ovatis, ad 14 cm longis et 10 cm latis, apice acuminatis, basi cordatis vel rotundatis, marginibus integris; inflorescentiis corymbosis cymis; capitulis ca 7 mm longis; corollis ca 3.5 mm longis, dentibus

limbi triangularibus, ca 1 mm longis, achaeniis ca 3 mm longis; pappi setis ca 32, ca 3.5 mm longis, barbellatis.

Liana, stems terete, weakly striate, glabrous, distinctly ligneous and lenticellate near base, internodes to 11 cm or more long. Leaves broadly ovate, to ca 14 cm long and 10 cm wide, margins entire, apices acuminate, bases shallowly cordate or rounded, upper surfaces glabrous, palmately 5-7 nerved, lower surfaces sparsely muricate, lighter than above, petioles to ca 6 cm long, glabrate. Inflorescence a somewhat cymose corymb, to ca 10 cm long and 13 cm in diameter, branchlets angular-winged, lightly puberulent, reddish, pedicels ca 4 mm long, exterior bract lanceolate to ovate, ca 2.5-3 mm long, glabrate to lightly puberulent, often reddish, apices acute to acuminate, borne at the top of the pedicel. Heads 6.5-7.5 mm long. Involucral scales linear-oblong, ca 5.5-6.5 mm long, glabrate to sparsely puberulent, especially at the base, with 1-3 obscure nerves, stramineous in color, apices acute. Corolla ca 3.5 mm long, white, tube ca 1.7 mm long, throat campanulate-funnelform ca 1.8 mm long, teeth ca 1-1.1 mm long, ca the same length to slightly longer than the length of the throat proper, triangular. Achene ca 3 mm long, glabrous, olive green, ribs with narrow subherbaceous wings. Pappus bristles ca 32, thin, white, ca 3.5 mm long, barbellate.

Holotype: PERU: Loreto. Prov. Maynas. Dtto. Indiana. ca 3 km up Río Amazonas from Indiana on opposite bank, open sandy alluvial area subj. to inundation, May 26, 1978, McDaniel (Rimachi, Holmes & Bruza) 21646 (IBE) (isotypes to be distributed to AMAZ, F, MO, NATC, NY, USM and numerous other herbaria).

Paratypes: BRAZIL: Para. Shore of the Amazon opposite Santarem, twiner hanging in great masses, July, 1850, Spruce 983 (F, GH); PERU: Loreto. Prov. Maynas. Dtto. Mazán. Río Napo near Mazán, overflowed bank, 110 m, January 29, 1932, Ynes Mexia 6467 (F, GH, MICH, MO, NO, NY, PH, TEX, UC). Dtto. Iquitos. Río Amazonas se of Iquitos across from Padre Isla, near sacarita de Yanayacu, July 5, 1974, McDaniel & Rimachi 18963 (IBE, NATC, other duplicates to be distributed), Iquitos, Ushpa-Caña, across Río Itaya, 100-120 m, August 20, 1968, McDaniel 10879 (IBE, NATC).

Mikania rimachii is similar to the more common M. micrantha. It can be distinguished by the somewhat less cordate leaves, linear-oblong involucral scales of about 5.5-6.5 mm long, corolla teeth about the same length or slightly longer than the throat proper and achene with narrow subherbaceous wings on the angles (ribs), most readily discernible on the immature achenes. Mikania micrantha has ovate-

oblong involucre scales about 3-4 mm long, corolla teeth about one-half the length of the throat proper and lacks the narrow subherbaceous wings on the angles of the achenes. In the field the new species may be distinguished from M. micrantha by its thicker, somewhat fleshy, moderately cordate to rounded at the base leaves, the ligneous older stems, and the cream white corolla. Mikania rimachii may be distinguished from M. cordifolia and M. microptera, both with similar foliage, inflorescence, and corolla teeth about as long or longer than the throat proper, by its lack of hexagonal stems, characteristic of the latter two species.

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